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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,338	01/28/2000	Jerome D. Toporek	16625-001110US	2127

7590 06/02/2004

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EXAMINER	
PHILPOTT, JUSTIN M	

ART UNIT	PAPER NUMBER
2665	14

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/493,338	TOPOREK ET AL.	
	Examiner	Art Unit	
	Justin M Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-13 and 22-32* is/are pending in the application.

4a) Of the above claim(s) *27-32* is/are withdrawn from consideration.

5)☒ Claim(s) *25* is/are allowed.

6)☒ Claim(s) *1,3-13,22-24 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *27-32* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 22, 2004 has been entered.

Election/Restrictions

2. Newly submitted claims 27-32 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: independent claim 27, and dependent claims 28 and 29, recites a processor for buffering information received over the connection from a second apparatus and for sending a repacketized flow of information to a client; and independent claim 30, and dependent claims 31 and 32, recites a processor for transmitting a first connection acknowledgement to a client after a third communication connection between a second apparatus and server is formed. Previously examined independent claims 1, 9, 23 and 25 are directed towards establishing a connection between first and second gateways without utilizing buffering and repacketization, and without transmitting a first connection acknowledgement to a client after a third communication connection between a second apparatus and server is formed.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 27-32 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

3. Applicant's arguments filed March 22, 2004 have been fully considered but they are not persuasive.

First, applicant argues (page 10, first paragraph) that Gelman teaches away from using a transport layer protocol as the second protocol because Gelman teaches utilizing a link layer (col. 8, lines 24-27). While Examiner recognizes that Gelman teaches overcoming particular noted deficiencies (e.g., detrimental effects of latency and errors) of a transport layer protocol (e.g., TCP) by utilizing a link layer (e.g., see col. 5, lines 54-67 and col. 8, lines 21-30), the teachings of Weaver also address these as well as other deficiencies of TCP (e.g., see page 165-166, sections (1)-(7)). Thus, combining the teachings of Weaver with that of Gelman provides a system which overcomes the deficiencies of TCP noted by Gelman and, further, provides additional advantages (e.g., capability of multicast, see Weaver, section 3.1) by means of utilizing XTP. Thus, while Gelman may not disclose the second protocol is a transport layer, one of ordinary skill in the art having knowledge of Weaver would advantageously apply the teachings of Weaver to that of Gelman to provide an overall more improved system having both the advantages disclosed by Gelman (e.g., overcoming detrimental effects of latency and errors)

and the additional advantages taught by Weaver (e.g., multicast capability). Accordingly, applicant's argument is not persuasive.

Second, applicant argues (page 10, second and third paragraphs) that Gelman fails to teach the limitation recited in the amended claim 1, "wherein the connection established between the first and second gateways is terminated when the flow of information and the return flow of information is complete". However, while Gelman teaches an embodiment with a plurality of TCP connections simultaneously, Gelman is not limited to such a teaching. Specifically, Gelman recites, "A WLP session *may* be associated with many TCP connections simultaneously" (emphasis added) (col. 21, lines 35-37). Thus, while Gelman introduces the possibility for a WLP session to be associated with more than a single TCP connection, Gelman clearly cannot be limited to such a teaching. That is, the above cited statement of Gelman anticipates any number, one or more, of TCP connections. Further, Gelman teaches that the connection is terminated when the information flows are complete by teaching that the VCs transfers data between the TCP connections and a WLP session until a client or server closes the connection (e.g., see col. 22, lines 11-24). Thus, applicant's argument is not persuasive.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 3-13, 22-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,415,329 to Gelman et al. in view of the article by Weaver entitled, "Xpress Transport Protocol Version 4" (IEEE, October 1995).

Regarding claims 1, 3, 4, 8, 9 and 22-24, Gelman teaches a communication apparatus (e.g., FIG. 1) for transmitting packetized information, comprising a plurality of packets, each comprising data and a header, over a satellite link (e.g., 14) in a telecommunications system comprising a client (e.g., source/client 10; see also col. 7, line 31-32 regarding client/source), a server (e.g., destination/server 18; see also col. 7, lines 32-33 regarding destination/server), a first gateway (e.g., 12) connected to the client (e.g., 10) by a first telecommunications link (e.g., 20), a second gateway (e.g., 16) connected to the server by a second telecommunications link (e.g., 24), and a third telecommunications link (e.g., 22) connecting the first gateway (e.g., 12) to the second gateway (e.g., 16), and the apparatus comprising: a TCP network interface (e.g., 260 in FIG. 12) for linking the first gateway (e.g., CG) with the client (e.g., CLIENT); a satellite gateway interface (e.g., 262); a system memory (e.g., stored translation table; see col. 17, lines 29-44); and a bus (e.g., 301) interconnecting the network interface (e.g., 260), the satellite gateway interface (e.g., 262), and the system memory with a processor (e.g., SNAT module), the processor operatively disposed to: intercept a connection with the server (e.g., 18) initiated by the client (e.g., 10); establish a connection between the first gateway (e.g., 12) and the second gateway (e.g., 16) over the third telecommunications link; and provide a bi-directional flow of information from the client (e.g., 10) to the server (e.g., 18) and from the server (e.g., 18) to the client (e.g., 10) using the connection between the first gateway (e.g., 12) and the second gateway (e.g., 16), wherein the providing a bi-directional flow occurs transparently to the client and the server (e.g., see col. 8, line 59 – col. 12, line 16; and col. 17, line 22 – col. 20, line 14 regarding operation of SNAT module). While Gelman may not specifically disclose selecting a client and server from a plurality of clients and servers, Gelman uses an example of a single client and a

single server for the purpose of clearly explaining the communication method. The method of Gelman, however, teaches improved communication over a high-delay bandwidth (e.g., satellite) *network* which implies more than one client and more than one server may be utilized. Furthermore, the Examiner takes official notice that it is well known in the art of satellite communications to select a client and server from a plurality of clients and servers.

Gelman further teaches converting a flow of information received from the client from a first protocol into a second protocol prior to transmission over the third telecommunications link, and converting a return flow of information from the second protocol into the first protocol prior to transmission to the client, wherein converting the flow of information and the return flow of information occurs transparently to the client and the server (e.g., see col. 2, line 34 – col. 4, line 9). Further, Gelman teaches that the connection is terminated when the information flows are complete by teaching that the VCs transfers data between the TCP connections and a WLP session until a client or server closes the connection (e.g., see col. 22, lines 11-24).

However, Gelman does not specifically teach both first and second protocols are specifically transport layer protocols. Rather, Gelman teaches a preferred embodiment wherein the first protocol is a transport layer protocol (e.g., TCP) and the second protocol is a link layer protocol, specifically a special wireless link protocol for satellite communications (e.g., WLP) which overcomes particular noted deficiencies (e.g., detrimental effects of latency and errors) of a transport layer protocol (e.g., TCP) by utilizing a link layer (e.g., see col. 5, lines 54-67 and col. 8, lines 21-30). Alternatively, Gelman further teaches the invention may be configured to convert among many different type of protocols (e.g., see col. 31, lines 50-62). However,

Gelman may not specifically disclose the second protocol is specifically a transport layer protocol.

As discussed above, Gelman teaches a second protocol (e.g., WLP) is used for communications via a satellite link (i.e., the third telecommunications link). By utilizing WLP as the second protocol, however, Gelman admittedly suffers from not having guaranteed end-to-end reliability (e.g., see col. 14, lines 35-51). Weaver teaches XTP and specifically, teaches the advantages provided by XTP such as multicast capability, multicast group management, priority capability, rate and burst control, selectable error control, selectable flow control and selective retransmission, among others (e.g., see sections 3.1 to 3.13). Even more specifically, Weaver teaches that features provided by XTP which are not provided by TCP are particularly desirable for satellite link communications (e.g., see section 3.8). Further, XTP overcomes the deficiencies of TCP (e.g., detrimental effects of latency and errors) noted by Gelman (e.g., see col. 5, lines 54-67) as well as addresses other deficiencies of TCP (e.g., see Weaver, pages 165-166, sections (1)-(7)). Particularly, XTP provides for selective retransmission which provides much more efficient communications in high-delay bandwidth networks such as satellite links. XTP is also a transport layer protocol having the same interconnectivity as TCP (e.g., see abstract). Thus, applying the teachings of Weaver to the system of Gelman would provide a system with improved satellite communications while further providing improved end-to-end reliability with a 1:1:1 connection relationship. Furthermore, applying the teachings of Weaver to the system of Gelman would overcome the deficiencies of TCP such as detrimental effects of latency and errors, as noted by Gelman (e.g., see col. 5, lines 54-67), as well as overcome other deficiencies of TCP (e.g., see Weaver, pages 165-166, sections (1)-(7)) by providing, e.g.,

multicasting capabilities. Accordingly, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the XTP teachings of Weaver to the system of Gelman wherein an XTP protocol is implemented as the second protocol for communications via the satellite link in order to provide a system with improved satellite communications while further providing improved end-to-end reliability, wherein the system overcomes the detrimental effects of latency and errors in TCP while further providing multicasting capability.

Regarding claims 5-7, Gelman teaches converting comprises removing the header to leave the data, i.e., portion of the flow information, substantially intact and encapsulating the data using a satellite protocol header (e.g., see col. 5, lines 54-60; and col. 8, lines 17-20). Gelman further teaches that additionally data may be compressed, encryption may be used, or the system may be implemented without making any changes to the code (col. 5, lines 60-67), although such compression and encryption steps are not required by Gelman but are merely additional possible processes which may be implemented for particular purposes. Accordingly, the teachings of Gelman implicitly comprise data being left substantially in tact, encapsulating data with a header, and/or data being a portion of the flow of information.

Regarding claim 10, Gelman teaches the information comprises a client address and a destination server address (e.g., see col. 26, lines 11-13 regarding addressing information; see also cols. 7-31).

Regarding claims 11 and 12, Gelman further teaches transmitting a response (e.g., CONN_ACK) from the second satellite gateway to the first satellite gateway, and from the first satellite gateway to the client, when the third communication connection with the destination server occurs (e.g., see col. 26, line 63 – col. 27, line 6).

Regarding claim 13, Gelman further teaches transmitting a failure response (e.g., CONN_NAK) from the first satellite gateway to the client when the third communication connection is lost (e.g., see col. 27, lines 7-16).

Regarding claim 26, Weaver teaches rate control is a feature of XTP (e.g., see section 3.4), and thus, an apparatus utilizing XTP would implicitly comprise a module for rate control.

Allowable Subject Matter

6. Claim 25 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: the limitation of the processor in the system described further operatively disposed to extract an urgent pointer from a packet header in the first transport protocol, and incorporate the urgent pointer into a packet header in the second transport protocol for transmission over the telecommunications link between the first and second gateways was not found in a search of the prior art.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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